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(54)【発明の名称】 車両内装用構成部材および車両用内装材

(57)【要約】

【課題】 良好な吸音性を保持し、空気流による汚れや異音の発生のない車両用内装材を提供する。

【解決手段】 融点150℃以上の耐熱フィルム(a)に発泡剤を配合した樹脂層(b)をコーティングした車両内装用構成部材または融点150℃以上の耐熱フィルム(a)に樹脂発泡層(d)が積層された車両内装用構成部材。また、上記いずれかの車両内装用構成部材において、その耐熱フィルム(a)の外側に融点150℃以下の熱可塑性樹脂層(c)を更に積層した車両内装用構成部材。更に、表皮材、基材、裏面材をこの順に組み合わせてなる車両用内装材において、裏面材が上記いずれかに記載の内装用構成部材(a)/(b)または(a)/(d)からなり、または内装用構成部材(c)/(a)/(b)または(c)/(a)/(d)からなる車両用内装材。

## 【特許請求の範囲】

【請求項1】 融点150℃以上の耐熱フィルム（a）に発泡剤を配合した樹脂層（b）をコーティングした車両内装用構成部材。

【請求項2】 融点150℃以上の耐熱フィルム（a）に樹脂発泡層（d）が積層された車両内装用構成部材。

【請求項3】 樹脂発泡層（d）が発泡剤を配合した樹脂層（b）を耐熱フィルム（a）に塗布した後発泡して形成されたものである請求項2に記載の車両内装用構成部材。

【請求項4】 請求項1～3のいずれかに記載の車両内装用構成部材において、その耐熱フィルム（a）の外側に融点150℃以下の熱可塑性樹脂層（c）を更に積層した車両内装用構成部材。

【請求項5】 表皮材、基材、裏面材をこの順に組み合わせてなる車両用内装材において、裏面材が請求項1に記載の内装用構成部材（a）／（b）または請求項2または3に記載の内装用構成部材（a）／（d）からなり、該裏面材の耐熱フィルム（a）面が基材側に位置するように積層および成形されてなる車両用内装材。

【請求項6】 表皮材、基材、裏面材をこの順に組み合わせてなる車両用内装材において、裏面材が請求項4に記載の内装用構成部材（c）／（a）／（b）または（c）／（a）／（d）からなり、該裏面材の熱可塑性樹脂（c）面が基材側に位置するように積層および成形されてなる車両用内装材。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、車両用内装材を構成する部材として使用できる内装用構成部材およびこの内装用構成部材を裏面材として使用する車両用内装材に関する。

## 【0002】

【従来の技術】車両用内装材として種々の構成のものが使用されている。車両用内装材に求められる特性として、その装飾性および搭乗者に対する接触感触性は必須のものであるが、それに加えて最近では低透気性が必要とされる。透気性が高いと室内の空気が気圧差により内装材を透過してボディの方へ移動する現象が生じ得るが、その際、室内空気中に浮遊するタバコのヤニなどの微粒子が内装材表面に捕捉されて内装材に汚れとなって付着する。そのためこの空気流をなくす必要があり、その対策として内装材には透気遮断層が設けられるようになってきた。透気遮断層には一般にプラスチックフィルムが使用されている。

【0003】特開平7-117571号公報には表皮材（クッション材付き）／多層フィルム／基材からなる車両用内装材が開示されている。多層フィルムは熱接着性を有する低融点樹脂層とその間にある高融点樹脂層を含み、この高融点層が透気遮断層として働くようにしてい

る。しかし、この発明では天井表皮材の汚染の問題に対しては効果があるものの、透気遮断層が薄い表皮材のすぐ裏面側にあるため、室内側からの音がこの透気遮断層で反射して内装材としての吸音機能を損なってしまうという問題が生じている。また、実開平5-65532号公報には、表皮材／基材／裏面材（ホットメルト＋非通気性フィルム）からなる構造材が開示されている。この構成では、この構造材が車両のボディーと接する最裏面側に樹脂フィルム層が存在するため、車両の振動等によって樹脂層と金属性ボディーとの摩擦によって異音が発生して搭乗者に不快感を与える。

## 【0004】

【発明が解決しようとする課題】本発明は、上記のような問題のない、即ち良好な吸音性を保持し、室内の空気流による汚れの発生が少なく、異音の発生防止に優れた車両用内装材を提供することを目的とする。

## 【0005】

【課題を解決するための手段】本発明は、融点150℃以上の耐熱フィルム（a）に発泡剤を配合した樹脂層（b）をコーティングした車両内装用構成部材に関する。また、本発明は、融点150℃以上の耐熱フィルム（a）に樹脂発泡層（d）が積層された車両内装用構成部材に関する。また、本発明のもうひとつの態様は、上記いずれかの車両内装用構成部材において、その耐熱フィルム（a）の外側に融点150℃以下の熱可塑性樹脂層（c）を更に積層した車両内装用構成部材に関する。更に、本発明は、表皮材、基材、裏面材をこの順に組み合わせてなる車両用内装材において、裏面材が上記いずれかに記載の内装用構成部材（a）／（b）または（a）／（d）からなり、該裏面材の耐熱フィルム（a）面が基材側に位置するように積層および成形されてなる車両用内装材に関する。加えて、本発明は、表皮材、基材、裏面材をこの順に組み合わせてなる車両用内装材において、裏面材が上記の内装用構成部材（c）／（a）／（b）または（c）／（a）／（d）からなり、該裏面材の熱可塑性樹脂（c）面が基材側に位置するように積層および成形されてなる車両用内装材に関する。

【0006】本発明の特徴は、融点150℃以上の耐熱フィルム（a）を組み込むことにより非通気性の層が設けられ通気による表皮材の汚れの発生を防止することができるとともに、この層を表皮材から遠い位置に配置することによりこの樹脂フィルムによる室内音の反射を防止することができ、しかも車両本体と接する最外層が発泡構造であるため車両本体との間で摩擦音の発生を防ぐことができることにある。

## 【0007】

【発明の実施の形態】本発明の車両構成用部材は、車両用内装材の裏面材として、室内側からボディー側への空気の流れを遮断する通気止め層として働き、裏面材とボディーとの間の摩擦による異音の発生を防ぎ、また成形

時の離型性の改良された裏面材として有用である。本発明の車両構成用部材は、融点150℃以上の耐熱フィルム(a)に発泡剤を配合した樹脂層(b)をコーティングした複合体であり、また本発明は、融点150℃以上の耐熱フィルム(a)に樹脂発泡層(d)が積層された複合体である。樹脂発泡層は、より好ましくは、融点150℃以上の耐熱フィルム(a)にコーティングした発泡剤を配合した樹脂層(b)を塗布後発泡したものである。しかし、樹脂発泡層は、予め形成された発泡樹脂シートまたはフィルム等であってもよく、これは接着剤を使用したり、部分的に溶融するなどの方法によって耐熱フィルム(a)に貼り合せることができる。樹脂発泡層を発泡剤を配合した樹脂(b)を塗布後発泡することによって形成する場合は、樹脂層(b)が耐熱フィルム(a)にコーティングされると同時にまたはコーティング後に加熱工程で配合された発泡剤によって発泡した発泡構造となってもよい。加熱工程による発泡は表皮材および基材と組み合わせて車両用内装材とした後であってもよいし、車両用内装材としての成形段階での加熱によって行ってもよい。

【0008】また、本発明の車両構成用部材は、もうひとつの態様として、上記いずれかの構成において、その耐熱フィルム(a)の外側、即ち発泡剤を配合した樹脂層(b)または発泡樹脂層(d)と反対の側に更に融点150℃以下の熱可塑性樹脂層(c)を更に積層した複合体である。この熱可塑性樹脂層(c)を有することによりこれがホットメルト接着剤として働き、他の部材と組み合わせて更なる複合体を形成するに好都合である。

【0009】耐熱性フィルム(a)に発泡剤を配合した樹脂層(b)または熱可塑性樹脂(c)をコーティングするには、コーティングに先だって耐熱性フィルム(a)の表面にプライマー塗布、アンカー処理、コロナ放電処理等の前処理を施して、表面を活性化しておくことが好ましく、それによって耐熱性フィルム(a)と発泡剤を配合した樹脂層(b)または熱可塑性樹脂(c)との接着をより確実にすることができる。

【0010】耐熱フィルム(a)は融点が150℃以上の樹脂、好ましくは融点が160℃以上の樹脂から選ばれる。車両内装用構成部材中にこのような耐熱フィルムの層を組み込むことによって、内装用構成部材またはこれを表皮材および基材と組み合わせた車両用内装材として熱成形を行った場合にピンホール等の欠損部が生じることがないため確実に非通気性の層を内在させることができる。このような耐熱フィルム用樹脂として、ナイロン6、66、6/66、6/10、11、12などの高融点ポリアミド樹脂、ポリプロピレン樹脂、エチレンビニルアルコール樹脂、ポリエチレンテレフタレート、ポリブチレンテレフタレートなどのポリエステル樹脂、ポリウレタン樹脂、アクリル樹脂、ポリカーボネート樹脂等が例示できる。フィルムは延伸、無延伸のいずれで

もよく、破断伸度が10%以上のものが好ましい。厚さは8~50μm、好ましくは9~30μmである。厚さが8μm未満では、成形時の熱、圧力で穴が開きやすく、通気止め性能に支障をきたす。また薄すぎることによりハンドリング性も悪化する。厚さが50μmより厚くなると、成形時の伸びが悪くなり賦形性に悪影響が出る。

【0011】耐熱フィルム(a)に塗布する発泡剤を配合した樹脂(b)をコーティングするためのコーティング組成物には、ベース樹脂としてアクリル酸エステル共重合体、ウレタン系樹脂、エチレン酢酸ビニル共重合体等を単独またはブレンドして用いることができる。コーティング組成物には添加剤として、発泡剤の他、シリコン系消泡剤、ブロッキング防止剤、乾燥促進剤、酸化防止剤、着色剤、フィラー等を含んでもよい。このコーティング組成物は水または溶剤に溶解した溶液、エマルジョン等のような分散体として用いることが好ましい。

【0012】発泡剤は、加熱により気体を発生するタイプのもので、重炭酸ナトリウム、重炭酸アンモニウムのような無機発泡剤、ニトロソ化合物、アゾ化合物、スルホニル・ヒドラジド等が好ましいものとして例示できるが、塩化ビニリデン/アクリロニトリルまたはアクリロニトリル/メチルメタクリレートの共重合樹脂を殻としてイソブチレンを内包したマイクロカプセルタイプの発泡剤が特に好ましい。マイクロカプセルの場合、粒径が5~30μm程度のものが特に好ましい。発泡剤は単独で用いても複数のものを併用して用いてもよい。また、コーティング組成物にはサリチル酸、尿素化合物等の発泡助剤を添加してもよい。

【0013】本発明の車両内装用構成部材は、上記耐熱フィルム(a)に発泡剤を配合した樹脂層(b)をコーティングして積層一体化したものである。樹脂層(b)の厚さは、加熱により形成される発泡体の状態によって異なり、一概には言えないが、一般的には好ましくは1~60g/m<sup>2</sup>、より好ましくは3~30g/m<sup>2</sup>である。耐熱フィルム(a)に発泡剤を配合した樹脂組成物(b)をコーティングする方法は特に限定されるものではなく、フィルム上に均一な厚さで塗膜を形成することのできるものであればどのようなコーティング方法を採用することもでき、例えばグラビア、フレキソ、オフセット、ロールコーター、ドクターコーター、エアークーター、ロータリースクリーン、Tダイによる方法が挙げられる。

【0014】本発明の車両構成用部材の別の態様は、耐熱フィルム(a)と発泡剤を配合した樹脂層(b)との積層体または耐熱フィルム(a)と樹脂発泡層(d)との積層体の外側に更に融点150℃以下の熱可塑性樹脂層(c)を積層した3層構造を有するものである。融点150℃以下の熱可塑性樹脂層(c)は、耐熱フィルム(a)と発泡剤を配合した樹脂層(b)との積層体また

は耐熱フィルム(a)と樹脂発泡層(d)を、基材に接着して車両用内装材を形成するにあたってホットメルト接着剤として機能することができるものである。

【0015】融点150℃以下の熱可塑性樹脂層(c)は、融点が好ましくは90~140℃、MFRが1~100g/10min、好ましくは3~90g/10minのものである。なお、ここでMFRは、JIS K7210に示される試験方法のうち、温度条件190℃、試験荷重21.18Nで測定した値を示す。ホットメルトフィルムのMFRが1より低いと、成形時の熔融粘度が高い10ため、溶融物が十分に被接着物に浸透せず十分な接着強度が得られない。他方、100より高いと成形時の樹脂の熔融粘度が低すぎて、上下の被接着物の内、接着時に下側にある方、例えば基材の方だけに浸透しすぎてやはり十分な接着力が得られにくい。またあまりMFRの大きいものを用いると、自動車用内装材としての耐熱性に悪影響を及ぼすことになる。より好ましいMFRの範囲は3~90である。

【0016】熱可塑性樹脂層(c)の厚さは好ましくは10~100μm、より好ましくは20~80μmである。20厚みが10μmより薄いと、成形時、基材に十分浸透しないため十分な接着力が得られない。また必要以上の厚さは経済性の面で不利となり、100μmを越えると過剰品質となる。より好ましい厚みは30~60μmである。上記ホットメルトフィルムは2層以上の多層フィルムとして用いてもよいが、コスト面、製造工程の簡易性の面で、そして特にリサイクル性の点で、単層がより好ましい。

【0017】このような樹脂としては各種ポリエチレン樹脂(低密度、中密度、高密度、線状低密度、分岐状低30密度)またはこれらの酸変性樹脂類；エチレン-アクリル酸共重合体、エチレン-メタクリル酸共重合体、エチレン-酢酸ビニル共重合体、エチレン-エチルアクリレート共重合体、エチレン-メチルアクリレート共重合体、エチレン-ブチルアクリレート共重合体、エチレン-メチルメタアクリレート共重合体、エチレン-ブチルメタアクリレート共重合体、エチレン-(メタ)アクリレート共重合体、エチレン-マレイン酸共重合体、エチレン-イタコン酸共重合体、エチレン-αオレフィン共重合体、エチレン-アクリル酸エステル-メタクリル酸三元共重40合体、エチレン-アクリル酸エステル-無水マレイン酸三元共重合体、またはこれらの酸またはシラン変性樹脂類；エチレンとアクリル酸あるいはメタクリル酸との共重合体をイオン架橋したアイオノマー類；アタクティックポリプロピレンまたはこれらの酸変性樹脂類；共重合体ポリアミド類；テレフタル酸とエチレングリコールおよび/または1,4-ブタンジオールとの共重合体あるいはその他の成分を含む共重合体ポリエステル類等を例示することができる。これらの樹脂を単独で使用しても混合物として使用してもよい。またこれらに炭酸カルシウム、50

タルクなどの充填材や粘着付与剤等の各種添加剤を混合してもよい。

【0018】耐熱フィルム(a)に熱可塑性樹脂(c)を積層する方法としては、耐熱フィルム上に熱可塑性樹脂(c)を塗布してもよいし、フィルム状に押し出しして積層してもよい。あるいは両成分を予めフィルムとして成形し、これを接着剤または熱融着によって接着一体化してもよい。耐熱フィルム上に塗布を行うにはTダイやロールコーター等の通常の樹脂塗布装置を用いて行うことができる。この場合、耐熱フィルムの表面をコロナ放電、フレイム処理、AC処理等によって前処理しておくことと接着性がより改良される。また熱可塑性樹脂(c)にオゾン処理を施しておくことによっても接着性がより向上する。

【0019】本発明は、また、上記車両内装用構成部材を裏面材として使用する車両用内装材に関する。車両用内装材は車両のボディーの室内面に取り付けられる部材であり、これは一般に表皮材、基材、および裏面材の3成分からなる。裏面材はボディーに接する側を構成し、一方表皮材は車両の内部側に来るように構成され、基材は表皮材と裏面材との間の中間層として構成される。本発明では、裏面材として上記車両内装用構成部材を使用するとともに、以下のように表皮材および基材を設定することによって、良好な吸音性を保持し、室内の空気流による表皮材の汚れ発生が少なく、且つ異音の発生のない車両用内装材を提供するものである。

【0020】本発明の車両用内装材において、基材となる材質は、加熱加圧により賦形可能なものであって、通気性を有するものが好ましい。このような基材は概して車両用内装材において吸音性、断熱性、人が触れた場合のソフト感・弾力感、意匠性の目的で組み込まれるものであって、その例としては、無機質繊維、有機質繊維、またはこれらの繊維混合物が熱可塑性樹脂により相互に接着された不織布、あるいはこれらの繊維からなる編布または織布が挙げられる。上記において無機質繊維としてはガラス繊維、炭素繊維等が、また有機質繊維としては綿、麻等の各種天然繊維；ポリエステル系繊維、ポリアミド系繊維、アクリル系繊維、ポリプロピレン系繊維、ポリビニルアルコール系繊維、アセテート系繊維、レーヨン等の各種合成または再生繊維が例示できる。また基材としては発泡ウレタンシート、またはこれをガラス繊維等で補強したものも使用することができる。

【0021】車両用内装材の表皮材は室内の装飾性および搭乗者が接触した場合に良好な感触を与えるために働くものであって、表皮材として使用できる材質は、通気性を有するものから選ばれる。具体的には、ポリエステル繊維、ポリプロピレン繊維等からなる不織布または織布、ニット、起毛ニット、およびこれらの裏に発泡ウレタンや不織布を裏打ちしたものを使用することができる。

【0022】表皮材、基材、裏面材をこの順に組み合わせる本発明の車両用内装材は、ひとつの態様として、融点150℃以上の耐熱フィルム(a)に発泡剤を配合した樹脂層(b)をコーティングした内装用構成部材(a)/(b)、または融点150℃以上の耐熱フィルム(a)に樹脂発泡層(d)が積層された内装用構成部材(a)/(d)からなる裏面材が、他の態様では、裏面材が(a)/(b)または(a)/(d)からなる内装用構成部材の耐熱フィルム(a)の外側に融点150℃以下の熱可塑性樹脂層(c)を更に積層した(c)/(a)/(b)または(c)/(a)/(d)からなる裏面材が用いられる。前者の態様ではいずれの場合も裏面材の耐熱フィルム(a)面が基材側に位置するように積層および成形され、後者の態様ではいずれの場合も裏面材の熱可塑性樹脂(c)面が基材側に位置するように積層および成形されてなる。なお、ここで発泡剤を配合した樹脂(b)はなお未発泡の状態であってもよいし、既に発泡した状態で内装用構成部材を形成していてもよい。

【0023】車両用内装材は表皮材、基材、裏面材のすべてを重ね合わせた上で接着次いで成形を逐次実施するかまたは成形と接着を同時に行ってもよいし、表皮材と基材、または基材と裏面材を先ず接着一体化し、次いで残りの部材を組み合わせてもよい。基材と裏面材との接着は、前者の態様では、そのいずれかまたは両方の接合界面に接着剤を塗布してもよいし、ホットメルトフィルムを挟み込んで熱接着して行ってもよい。後者の態様では、融点150℃以下の熱可塑性樹脂(c)をそのままホットメルト樹脂として利用して熱接着することができる。

#### 【0024】

【実施例】以下、実施例により本発明をより具体的、且つ詳細に説明する。

#### 実施例 1

グラビア印刷法によって、耐熱フィルム上にコーティング樹脂組成物を乾燥後の樹脂塗布量が5 g/m<sup>2</sup>となるように塗布した。耐熱フィルムとして表面コロナ放電処理した厚さ12 μmの二軸延伸PETフィルムを用い、コーティング樹脂組成物はベース樹脂としてアクリル酸エステル共重合体、発泡剤として塩化ビニリデン/アクリロニトリル共重合体膜中にイソブタンを内包したマイクロカプセル、更に添加剤として少量のシリコン型消泡剤および乾燥促進剤を含有する水性分散体を用いた。グラビア印刷は100線、深度60 μmに設定してライン速度100 m/minで行った。コーティングした耐熱フィルムは100℃に設定した乾燥ボックスを通して乾燥した。こうして(a)/(b)タイプの車両内装用構成部材を作製した。

【0025】次に、基材として層間をウレタン系液状接着剤で接着したガラスマット/硬質発泡ウレタンシート/ガラスマット(合計厚さ6 mm)を用い、この上下に

表皮材および上記で得た車両内装用構成部材を重ねて接着一体化して車両用内装材を作製した。なお車両内装用構成部材は耐熱フィルム(a)が基材側に来るように重ねた。また表皮材としては目付180 g/m<sup>2</sup>のニードルパンチ不織布(ポリエステル製)を用いた。重ね合わせた3層を、上型温度を120℃、下型温度を130℃に設定した金型内にセットし、60秒間加圧した。なお加圧に当たっては目標とする基材厚さより0.8 mm高い6.8 mmの高さのスペーサーを使用した。この熱プレスによる接着一体化の工程で金型の熱により発泡剤を配合した樹脂(b)層は発泡した。またこの3層の接着はガラスマットから染み出した接着剤を利用して行った

#### 【0026】実施例 2

ロータリスクリーン印刷法によって、耐熱フィルム上にコーティング樹脂組成物を乾燥後の樹脂塗布量が13 g/m<sup>2</sup>となるように塗布した。耐熱フィルムとして厚さ20 μmの無延伸ナイロン6フィルムを用い、コーティング樹脂組成物はベース樹脂としてウレタン樹脂、発泡剤としてアクリロニトリル/メチルメタクリレート共重合体膜中にイソブタンを内包したマイクロカプセル、更に添加剤として少量の乾燥促進剤を含有する水性分散体を用いた。ロータリスクリーン印刷は120メッシュの版を使用し、厚み100 μmに設定してライン速度30 m/minで行った。コーティングした耐熱フィルムは120℃に設定した乾燥ボックスを通して乾燥すると同時にコーティング層を発泡させた。こうして発泡剤を配合した樹脂(b)層が発泡した(a)/(d)からなるフィルムを作製した。次にこのフィルム上のナイロン6フィルム側に、ダイス温度200℃に設定したTダイを用いて30 μmの厚さにエチレン-メタクリル酸共重合体(融点98℃、MFR 8)を押出ラミネートした。こうして(c)/(a)/(d)タイプの車両内装用構成部材を作製した。

【0027】次に、基材として目付800 g/m<sup>2</sup>のポリエステル繊維マット、表皮材として裏側にウェブ状ポリエステル系ホットメルト接着剤を30 g/m<sup>2</sup>積層した目付180 g/m<sup>2</sup>のニードルパンチ不織布(ポリエステル製)を用いた。上下金型の温度を50℃に設定したプレス機の下型上に車両内装用構成部材の樹脂発泡層(d)層を下にしてセットした。この車両内装用構成部材の上に、220℃の加熱炉で加熱した基材を重ね、その上に即座に表皮材を重ね、厚さ5 mmのスペーサーを用いて40秒間加圧成形して、車両用内装材を作製した。3層はそれぞれの接合面に存在する表皮材および車両内装用構成部材のホットメルト接着剤によって一体化されている。

#### 【0028】実施例 3

グラビア印刷法によって、耐熱フィルム上にコーティング樹脂組成物を乾燥後の樹脂塗布量が5 g/m<sup>2</sup>となるように塗布した。耐熱フィルムとして表面コロナ放電処

理した厚さ12 $\mu$ の二軸延伸PETフィルムを用い、コーティング樹脂組成物はベース樹脂としてアクリル酸エステル共重合体、発泡剤として塩化ビニリデン/アクリロニトリル共重合体膜中にイソブタンを内包したマイクロカプセル、更に添加剤として少量のシリコン型消泡剤および乾燥促進剤を含有する水性分散体を用いた。グラビア印刷は100線、深度60 $\mu$ に設定してライン速度100m/minで行った。コーティングした耐熱フィルムは140℃の加熱炉に入れて乾燥した。加熱炉では乾燥と同時にコーティング層を発泡させた。こうして発泡剤を配合した樹脂(b)層が発泡した(a)/(d)タイプの車両内装用構成部材を作製した。

【0029】次に、基材として層間をウレタン系液状接着剤で接着したガラスマット/硬質発泡ウレタンシート/ガラスマット(合計厚さ6mm)を用い、この上下に表皮材および上記で得た車両内装用構成部材を重ねて接着一体化して車両内装材を作製した。なお車両内装用構成部材は耐熱フィルム(a)が基材側に来るように重ねた。また表皮材としては目付180g/m<sup>2</sup>のニードルパンチ不織布(ポリエステル製)を用いた。重ね合わせた3層を、上型温度を120℃、下型温度を130℃に設定した金型内にセットし、60秒間加圧した。なお加圧に当たっては目標とする基材厚さより0.8mm高い6.8mmの高さのスペーサーを使用した。この3層 \*

\*の接着はガラスマットから染み出した接着剤を利用して行った

#### 【0030】比較例 1

車両内装用構成部材として、本発明の積層体(a)/(b)を使用する代わりに耐熱フィルム(a)単層品を使用した以外は実施例1と同様にして車両内装材を作製した。

#### 【0031】異音発生の評価方法

実施例1～3、および比較例1で得た車両内装材を自動車の天井に取り付け、振動を与えた際の異音の発生状況を評価した。結果は次の通りであった。

実施例1：特に異音の発生は観察されなかった。

実施例2：特に異音の発生は観察されなかった。

実施例3：特に異音の発生は観察されなかった。

比較例1：こすれ音およびきしみ音が観察された。

#### 【0032】

【発明の効果】通気止め層を有する本発明の内装用構成部材を裏面材として用い、車両内装材を構成することにより、良好な吸音性を保持し、表層から裏面への室内空気の流通がなくなるため表皮材上に汚れが付着することを防止できる。また車両ボディーに接する裏面側が発泡樹脂で構成されるため摩擦による異音(きしみ音)も生じない。

フロントページの続き

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[Claim(s)]

[Claim 1] The configuration member for car interiors which coated the resin layer (b) which blended the foaming agent with the heat-resistant film (a) with a melting point of 150 degrees C or more.

[Claim 2] The configuration member for car interiors by which the laminating of the resin foaming layer (d) was carried out to the heat-resistant film (a) with a melting point of 150 degrees C or more.

[Claim 3] The configuration member for car interiors according to claim 2 which applied to the heat-resistant film (a) the resin layer (b) with which the resin foaming layer (d) blended the foaming agent and which is formed by carrying out a late-coming bubble.

[Claim 4] The configuration member for car interiors which carried out the laminating of the thermoplastics layer (c) with a melting point of 150 degrees C or less to the outside of the heat-resistant film (a) further in the configuration member for car interiors according to claim 1 to 3.

[Claim 5] In the interior material for cars which comes to combine epidermis material, a base material, and a flesh-side facing with this order They are a laminating and the interior material for cars which it comes to fabricate so that a flesh-side facing may consist of configuration (member a)/(b) or according to claim 2 or 3 configuration member for interiors (a) for interiors/(d) according to claim 1 and the heat-resistant film (a) side of this flesh-side facing may be located in a base material side.

[Claim 6] They are a laminating and the interior material for cars which it comes to fabricate so that a flesh-side facing may consist of configuration (member c) for interiors/(a)/(b) according to claim 4, or (c)/(a)/(d) and the thermoplastics (c) side of this flesh-side facing may be located in a base material side in the interior material for cars which comes to combine epidermis material, a base material, and a flesh-side facing with this order.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the interior material for cars which uses the configuration member for interiors which can be used as a member which constitutes the interior material for cars, and this configuration member for interiors as a flesh-side facing.

[0002]

[Description of the Prior Art] The thing of various configurations is used as interior material for cars. Although the fanciness and the contact feel nature to a passenger are indispensable as a property for which the interior material for cars is asked, in addition to it, recently, low infiltration is needed. Although the phenomenon which indoor air penetrates interior material according to an atmospheric-pressure difference, and moves to the direction of the body may arise when infiltration is high, in that case, it is caught by the interior material front face, and particles, such as tar

of the tobacco which floats during indoor air, serve as dirt, and adhere to interior material. Therefore, it is necessary to lose this airstream and an infiltration filter layer has come to be established in interior material as that cure. Generally plastic film is used for the infiltration filter layer.

[0003] The interior material for cars which consists of epidermis material (with a cushioning material) / a multilayer film / a base material is indicated by JP,7-117571,A. He is trying for this high-melting layer to commit a multilayer film as an infiltration filter layer including the low-melt point point resin layer which has a heat adhesive property, and the high-melting resin layer which exists between them. However, in this invention, although it is effective to the problem of contamination of head-lining epidermis material, since [ of epidermis material with a thin infiltration filter layer ] it is in a rear-face side immediately, the problem that the sound from an interior-of-a-room side will reflect in this infiltration filter layer, and will spoil the absorption-of-sound function as interior material has arisen. Moreover, the structure material which consists of epidermis material / a base material / a flesh-side facing (hot melt + non-breathable film) is indicated by JP,5-65532,U. With this configuration, since a resin film layer exists in the maximum rear-face side where this structure material touches the body of a car, by vibration of a car etc., an allophone occurs by friction with a resin layer and the metallicity body, and displeasure is given to a passenger.

[0004]

[Problem(s) to be Solved by the Invention] This invention does not have the above problems, i.e., good absorption-of-sound nature is held, there is little generating of the dirt by indoor airstream, and it aims at offering the interior material for cars excellent in generating prevention of an allophone.

[0005]

[Means for Solving the Problem] This invention relates to the configuration member for car interiors which coated the resin layer (b) which blended the foaming agent with the heat-resistant film (a) with a melting point of 150 degrees C or more. Moreover, this invention relates to the configuration member for car interiors by which the laminating of the resin foaming layer (d) was carried out to the heat-resistant film (a) with a melting point of 150 degrees C or more. Moreover, another mode of this invention is related with the configuration member for car interiors which carried out the laminating of the thermoplastics layer (c) with a melting point of 150 degrees C or less to the outside of the heat-resistant film (a) further in the configuration member for car interiors of one of the above. Furthermore, in the interior material for cars which comes to combine epidermis material, a base material, and a flesh-side facing with this order, a flesh-side facing becomes one of the above from configuration (member a) for interiors/(b) or (a)/(d) of a publication, and this invention relates to a laminating and the interior material for cars which it comes to fabricate so that the heat-resistant film (a) side of this flesh-side facing may be located in a base material side. In addition, this invention is set to the interior material for cars which comes to combine epidermis material, a base material, and a flesh-side facing with this order. A flesh-side facing consists of above-mentioned configuration (member c) for interiors/(a)/(b) or above-mentioned (c)/(a)/(d), and it is related with a laminating and



the interior material for cars which it comes to fabricate so that the thermoplastics (c) side of this flesh-side facing may be located in a base material side.

[0006] While the layer of non-permeability is prepared by incorporating a heat-resistant film (a) with a melting point of 150 degrees C or more and the description of this invention can prevent generating of the dirt of the epidermis material by aeration Reflection of the indoor sound by this resin film can be prevented by arranging this layer in a location distant from epidermis material, and since the outermost layer which moreover touches the body of a car is foaming structure, it is in the place which can prevent generating of a fricative between the bodies of a car.

[0007]

[Embodiment of the Invention] The member for a car configuration of this invention is useful as a flesh-side facing which works as a flesh-side facing of the interior material for cars as an aeration stop layer which intercepts the flow of the air from an interior-of-a-room side to a body side, and prevents generating of the allophone by friction between a flesh-side facing and the body and by which the mold-release characteristic at the time of shaping was improved. The member for a car configuration of this invention is the complex which coated the resin layer (b) which blended the foaming agent with the heat-resistant film (a) with a melting point of 150 degrees C or more, and this invention is the complex with which the laminating of the resin foaming layer (d) was carried out to the heat-resistant film (a) with a melting point of 150 degrees C or more. A resin foaming layer carries out the spreading late-coming bubble of the resin layer (b) which blended more preferably the foaming agent with which the heat-resistant film (a) with a melting point of 150 degrees C or more was coated. However, a resin foaming layer may be a foaming resin sheet or a film formed beforehand, and this can use adhesives or it can stick it on a heat-resistant film (a) by the approach of fusing partially. When forming by carrying out the spreading late-coming bubble of the resin (b) which blended the foaming agent for the resin foaming layer, you may have foaming structure in which it foamed with the foaming agent blended at the heating process after coating at the same time coating of the resin layer (b) is carried out to a heat-resistant film (a). Foaming by the heating process may be, after considering as the interior material for cars combining epidermis material and a base material, and heating in the shaping phase as interior material for cars may perform it.

[0008] Moreover, the member for a car configuration of this invention is the complex which carried out the laminating of the thermoplastics layer (c) with a melting point of 150 degrees C or less to the resin layer (b) or foaming resin layer (d), and opposite side further in the configuration of one of the above as another mode. [ which blended the outside of the heat-resistant film (a), i.e., a foaming agent, ] This is convenient by having this thermoplastics layer (c) for working as hot melt adhesive and forming the further complex combining other members.

[0009] In order to coat the resin layer (b) or thermoplastics (c) which blended the foaming agent with the heat-resistant film (a) In advance of coating, primer spreading, support processing, corona discharge treatment, etc. are pretreated on the front face of a heat-resistant film (a). It is desirable to activate a front face and it can make more reliable adhesion with the resin layer (b) or thermoplastics (c) which blended the heat-resistant film (a) and the foaming agent by it.

[0010] a heat-resistant film (a) -- the melting point -- resin 150 degrees C or more -- the melting

point is preferably chosen from resin 160 degrees C or more. Since the deficit sections, such as a pinhole, do not arise when thermoforming is performed as interior material for cars which combined the configuration member for interiors, or this with epidermis material and a base material, the layer of non-permeability can certainly be made inherent by incorporating the layer of such a heat-resistant film into the configuration member for car interiors. As such resin for heat-resistant films, polyester resin, such as high-melting polyamide resin, such as nylon 6, 66 and 6 / 6 / 12, etc., polypropylene resin, ethylene-vinyl alcohol resin, polyethylene terephthalate, and polybutylene terephthalate, polyurethane resin, acrylic resin, polycarbonate resin, etc. can be illustrated. [ 66 and 6 ] [ 10, 11, 12, etc. ] Any which are not extended [ extension and ] are sufficient as a film, and whenever [ breaking extension ] is [ 10% or more of thing ] desirable. 8-50 micrometers of thickness are 9-30 micrometers preferably. In less than 8 micrometers, it is easy to open a hole by the heat at the time of shaping, and the pressure, and thickness causes trouble to the aeration stop engine performance. Moreover, handling nature also gets worse by being too thin. If thickness becomes thicker than 50 micrometers, the elongation at the time of shaping will worsen and a bad influence will appear in formativeness.

[0011] independent [ as base resin / in an acrylic ester copolymer, urethane system resin, an ethylene-vinyl acetate copolymer, etc. ] to the coating constituent for coating the resin (b) which blended the foaming agent applied to a heat-resistant film (a) -- or it can blend and use. A silicon system defoaming agent besides a foaming agent, an antiblocking agent, a dryer, an antioxidant, a coloring agent, a filler, etc. may also be included in a coating constituent as an additive. As for this coating constituent, it is desirable to use as dispersing elements, such as a solution which dissolved in water or a solvent, and an emulsion.

[0012] Although a foaming agent is the thing of the type which generates a gas with heating and sodium bicarbonate, an inorganic foaming agent like ammonium bicarbonate, a nitroso compound, an azo compound, sulfonylhydrazide, etc. can illustrate as a desirable thing, especially the foaming agent of the microcapsule type which connoted the isobutylene by using the copolymerization resin of a vinylidene chloride / acrylonitrile or acrylonitrile / methyl methacrylate as husks is desirable. In the case of a microcapsule, especially the thing whose particle size is about 5-30 micrometers is desirable. A foaming agent may be used independently, or may use together and use two or more things. Moreover, to a coating constituent, foaming assistants, such as a salicylic acid and a urea compound, may be added.

[0013] The configuration member for car interiors of this invention coats the resin layer (b) which blended the foaming agent with the above-mentioned heat-resistant film (a), and carries out laminating unification. although the thickness of a resin layer (b) changes with conditions of the foam formed by heating and \*\*\*\*\* does not generally have it -- general -- desirable -- 1 - 60 g/m<sup>2</sup> -- it is 3 - 30 g/m<sup>2</sup> more preferably. Especially the approach of coating the resin constituent (b) which blended the foaming agent with the heat-resistant film (a) is not limited, if a paint film can be formed by uniform thickness on a film, it can also adopt what kind of coating approach, for example, the approach by gravure, flexo one, offset, a roll coater, the doctor coating machine, the Ayr coating machine, the rotary screen, and the T die is mentioned.

[0014] Another mode of the member for a car configuration of this invention has the three-tiered structure which carried out the laminating of the thermoplastics layer (c) with a melting point of 150 degrees C or less further on the outside of a layered product with the resin layer (b) which blended the heat-resistant film (a) and the foaming agent, or the layered product of a heat-resistant film (a) and a resin foaming layer (d). In pasting up the layered product or the

heat-resistant film (a), and resin foaming layer (d) with a resin layer (b) which blended the heat-resistant film (a) and the foaming agent on a base material, and forming the interior material for cars, a thermoplastics layer (c) with a melting point of 150 degrees C or less can function as hot melt adhesive.

[0015] a thermoplastics layer (c) with a melting point of 150 degrees C or less -- the melting point -- desirable -- 90-140 degrees C and MFR -- 1-100g/-- it is the thing of 3 - 90g / 10min preferably 10 min. In addition, MFR shows the value measured among the test methods shown in JIS K7210 by 190 degrees C of temperature conditions, and 21.18 Ns of test loads here. If MFR of a hot melt film is lower than 1, since the melt viscosity at the time of shaping is high, melt will not fully permeate a pasted up object and sufficient bond strength will not be obtained. On the other hand, if higher than 100, the direction which whose melt viscosity of the resin at the time of shaping is too low, and has it in the bottom among up-and-down pasted up objects at the time of adhesion, for example, the direction of a base material, will be permeated too much, and too sufficient adhesive strength will be hard to be obtained. Moreover, when what has not much large MFR is used, it will have a bad influence on the thermal resistance as interior material for automobiles. The range of more desirable MFR is 3-90.

[0016] 10-100 micrometers of thickness of a thermoplastics layer (c) are 20-80 micrometers more preferably. If thickness is thinner than 10 micrometers, since a base material is not permeated enough, sufficient adhesive strength will not be obtained at the time of shaping. Moreover, the thickness beyond the need becomes disadvantageous in respect of economical efficiency, and if 100 micrometers is exceeded, it will serve as superfluous quality. More desirable thickness is 30-60 micrometers. Although the above-mentioned hot melt film may be used as a multilayer film more than two-layer, it is especially a cost side and the simple field of a production process, and a monolayer is more desirable in respect of recycle nature.

[0017] as such resin -- various polyethylene resin (a low consistency, semi-gross density, and high density --) a line -- a low consistency, letter of branching low consistencies, or these acid modified resin; ethylene-acrylic-acid copolymers -- An ethylene-methacrylic-acid copolymer, an ethylene-vinylacetate copolymer, An ethylene-ethyl acrylate copolymer, an ethylene-methyl acrylate copolymer, An ethylene-butyl acrylate copolymer, an ethylene-methylmetaacrylate copolymer, An ethylene-butyl methacrylate copolymer, an ethylene-(meta) acrylate copolymer, An ethylene-maleic-acid copolymer, an ethylene-itaconic-acid copolymer, an ethylene-alpha olefine copolymer, An ethylene-acrylic ester-methacrylic-acid ternary polymerization object, an ethylene-acrylic ester-maleic-anhydride ternary polymerization object, Or these acids Or silane modified resin; Ethylene and an acrylic acid Or a copolymer with a methacrylic acid ionomer; which carried out ion bridge formation -- atactic polypropylene or these acid modified resin; -- copolymer polyamides; -- a copolymer with a terephthalic acid, ethylene glycol, and/or 1,4-butanediol, or other components The included copolymer polyester can be illustrated. These resin may be used independently or you may use it as mixture. Moreover, various additives, such as fillers, such as a calcium carbonate and talc, and a tackifier, may be mixed to these.

[0018] As an approach of carrying out the laminating of the thermoplastics (c) to a heat-resistant film (a), thermoplastics (c) may be applied on a heat-resistant film, it may carry out by extruding in the shape of a film, and a laminating may be carried out. Or both components may be beforehand fabricated as a film and the adhesion unification of this may be carried out by adhesives or thermal melting arrival. For applying on a heat-resistant film, it can carry out using the usual resin coaters, such as a T die and a roll coater. In this case, if the front face of a

heat-resistant film is pretreated by corona discharge, frame processing, AC processing, etc., an adhesive property will be improved more. Moreover, an adhesive property improves more also by ozonizing to thermoplastics (c).

[0019] This invention relates to the interior material for cars which uses the above-mentioned configuration member for car interiors as a flesh-side facing again. The interior material for cars is a member attached in the indoor side of the body of a car, and, generally this consists of three components of epidermis material, a base material, and a flesh-side facing. A flesh-side facing constitutes the side which touches the body, on the other hand, epidermis material is constituted so that it may come to the interior side of a car, and a base material is constituted as an interlayer between epidermis material and a flesh-side facing. In this invention, while using the above-mentioned configuration member for car interiors as a flesh-side facing, by setting up epidermis material and a base material as follows, good absorption-of-sound nature is held, there is little dirt generating of the epidermis material by indoor airstream, and the interior material for cars without generating of an allophone is offered.

[0020] As for the quality of the material used as a base material, in the interior material for cars of this invention, what size enlargement is possible and has permeability by heating pressurization is desirable. Such a base material is incorporated for the purpose of a feeling of softness and a feeling of elasticity when absorption-of-sound nature, adiabatic, and a man touch in the interior material for cars generally, and design nature, and the nonwoven fabric which an inorganic fiber, organic fiber, or such fiber mixture pasted up mutually with thermoplastics, the knitted fabric which consists of these fiber, or textile fabrics is mentioned as the example. In the above, a glass fiber, a carbon fiber, etc. can illustrate various composition or regenerated fibers, such as various natural fiber; polyester fiber, such as cotton and hemp, a polyamide fiber, an acrylic fiber, polypropylene system fiber, a polyvinylalcohol fiber, acetate system fiber, and rayon, as organic fiber as an inorganic fiber again. Moreover, as a base material, a urethane foam sheet or the thing which reinforced this with the glass fiber etc. can also be used.

[0021] The quality of the material which commits in order that the epidermis material of the interior material for cars may give a good feel, when indoor fanciness and an indoor passenger contact, and can be used as epidermis material is chosen from what has permeability. Specifically, what backed urethane foam and a nonwoven fabric can be used for the nonwoven fabric which consists of polyester fiber, a polypropylene fiber, etc. or textile fabrics, knitting, pile, and these flesh sides.

[0022] The interior material for cars of this invention which comes to combine epidermis material, a base material, and a flesh-side facing with this order Configuration member for interiors (a)/which coated the resin layer (b) which blended the foaming agent with the heat-resistant film (a) with a melting point of 150 degrees C or more as one mode (b), The flesh-side facing which consists of configuration member for interiors (a)/(d) by which the laminating of the resin foaming layer (d) was carried out to the heat-resistant film (a) with a melting point of 150 degrees C or more or in other modes The flesh-side facing carried out the laminating of the thermoplastics layer (c) with a melting point of 150 degrees C or less to the outside of the heat-resistant film (a) of the configuration member for interiors which consists of (a)/(b) or (a)/(d) further. (c)/(a)/(b) or (c)/(a) The flesh-side facing which consists of / (d) is used. in any case, in the former mode, the heat-resistant film (a) side of a flesh-side facing is located in a base material side -- as -- a laminating -- and it is fabricated and, in any case, the thermoplastics (c) side of a flesh-side facing is located in a base material side in the latter mode -- as -- a laminating -- and it comes to be

fabricated In addition, in addition, the resin (b) which blended the foaming agent here may be in the condition of not foaming, and may form the configuration member for interiors in the condition of having already foamed.

[0023] The interior material for cars may fabricate by the adhesion following \*\* serially, after piling up epidermis material, base materials, and all the flesh-side facings, or it may perform shaping and adhesion to coincidence, may carry out the adhesion unification of epidermis material, a base material or a base material, and the flesh-side facing first, and, subsequently may combine the remaining members. In the former mode, adhesives may be applied to the either or both junction interfaces, a hot melt film may be put, heat adhesion may be carried out, and adhesion with a base material and a flesh-side facing may be performed. In the latter mode, heat adhesion can be carried out as hot melt resin, using thermoplastics (c) with a melting point of 150 degrees C or less as it is.

[0024]

[Example] Hereafter, an example explains this invention to more concrete and a detail.

Example With 1 gravure, it applied so that the resin coverage after drying a coating resin constituent on a heat-resistant film might serve as 5 g/m<sup>2</sup>. The coating resin constituent used the aquosity dispersing element containing the microcapsule with which the acrylic ester copolymer was connoted as base resin, and it connoted the isobutane in a vinylidene chloride / acrylonitrile-copolymer film as a foaming agent, the still more nearly little silicon mold defoaming agent as an additive, and a dryer using the biaxial-stretching PET film with a thickness of 12micro which carried out surface corona discharge treatment as a heat-resistant film. Gravure was set as 100 lines and the depth of 60micro, and was performed by line speed 100 m/min. The coated heat-resistant film was dried through the desiccation box set as 100 degrees C. In this way, the configuration member for car interiors of (a)/(b) type was produced.

[0025] Next, using the fiberglass mat / hard urethane foam sheet / fiberglass mat (6mm in sum total thickness) on which between layers was pasted up with urethane system liquid glue as a base material, the adhesion unification of this configuration member for car interiors obtained by epidermis material and the above up and down was carried out in piles, and the interior material for cars was produced. In addition, the configuration member for car interiors was piled up so that a heat-resistant film (a) might come to a base material side. Moreover, as epidermis material, the needle punch nonwoven fabric (product made from polyester) of eyes 180 g/m<sup>2</sup> was used. Three layers made to pile up mutually were set in the metal mold which set punch temperature as 120 degrees C, and set female mold temperature as 130 degrees C, and were pressurized for 60 seconds. In addition, if in charge of pressurization, the spacer with a higher 0.8mm than target base material thickness height of 6.8mm was used. It foamed in the resin (b) layer which blended the foaming agent with the heat of metal mold at the process of the adhesion unification by this heat press. Moreover, this adhesion of three layers is [0026] performed using the adhesives which oozed out from the fiberglass mat. Example With 2 rotary screen printing, it applied so that the resin coverage after drying a coating resin constituent on a heat-resistant film might be set to 13g/m<sup>2</sup>. The coating resin constituent used the microcapsule with which urethane resin was connoted as base resin and it connoted the isobutane in acrylonitrile / methyl methacrylate copolymer film as a foaming agent, and the aquosity dispersing element containing the still more nearly little dryer as an additive, using a non-extended nylon 6 film with a thickness of 20micro as a heat-resistant film. Rotary screen printing used the version of 120 meshes, set it as the thickness of 100micro, and was performed by line speed 30 m/min. The coating layer was made to

foam on the coated heat-resistant film at the same time it dried through the desiccation box set as 120 degrees C. In this way, the film which consists of (a)/(d) to which the resin (b) layer which blended the foaming agent foamed was produced. Next, at the nylon 6 film side on this film, the extrusion lamination of the ethylene-methacrylic-acid copolymer (the melting point of 98 degrees C, MFR8) was carried out at the thickness of 30micro using the T die set as the dice temperature of 200 degrees C. In this way, the configuration member for car interiors of (c)/(a) / (d) type was produced.

[0027] Next, the needle punch nonwoven fabric (product made from polyester) of eyes 180 g/m<sup>2</sup> which carried out the 30 g/m<sup>2</sup> laminating of the web-like polyester system hot melt adhesive to the background was used as the polyester fiber mat of eyes 800 g/m<sup>2</sup>, and epidermis material as a base material. It set downward by carrying out the resin foaming layer (d) layer of the configuration member for car interiors on the female mold of the press machine which set the temperature of vertical metal mold as 50 degrees C. On this configuration member for car interiors, the base material heated with the 220-degree C heating furnace was piled up, on it, epidermis material was piled up immediately, pressing was carried out for 40 seconds using the spacer with a thickness of 5mm, and the interior material for cars was produced. Three layers are unified with the hot melt adhesive of the epidermis material which exists in each plane of composition, and the configuration member for car interiors.

[0028] Example With 3 gravure, it applied so that the resin coverage after drying a coating resin constituent on a heat-resistant film might serve as 5 g/m<sup>2</sup>. The coating resin constituent used the aqueosity dispersing element containing the microcapsule with which the acrylic ester copolymer was connoted as base resin, and it connoted the isobutane in a vinylidene chloride / acrylonitrile-copolymer film as a foaming agent, the still more nearly little silicon mold defoaming agent as an additive, and a dryer using the biaxial-stretching PET film with a thickness of 12micro which carried out surface corona discharge treatment as a heat-resistant film. Gravure was set as 100 lines and the depth of 60micro, and was performed by line speed 100 m/min. The coated heat-resistant film was put into the 140-degree C heating furnace, and was dried. The coating layer was made to foam to desiccation and coincidence in a heating furnace. In this way, the configuration member for car interiors of (a)/(d) type in which the resin (b) layer which blended the foaming agent foamed was produced.

[0029] Next, using the fiberglass mat / hard urethane foam sheet / fiberglass mat (6mm in sum total thickness) on which between layers was pasted up with urethane system liquid glue as a base material, the adhesion unification of this configuration member for car interiors obtained by epidermis material and the above up and down was carried out in piles, and the interior material for cars was produced. In addition, the configuration member for car interiors was piled up so that a heat-resistant film (a) might come to a base material side. Moreover, as epidermis material, the needle punch nonwoven fabric (product made from polyester) of eyes 180 g/m<sup>2</sup> was used. Three layers made to pile up mutually were set in the metal mold which set punch temperature as 120 degrees C, and set female mold temperature as 130 degrees C, and were pressurized for 60 seconds. In addition, if in charge of pressurization, the spacer with a higher 0.8mm than target base material thickness height of 6.8mm was used. This adhesion of three layers is [0030] performed using the adhesives which oozed out from the fiberglass mat. Example of a comparison As a configuration member for 1 car interiors, the interior material for cars was produced like the example 1 except having used the heat-resistant (film a) monolayer article instead of using layered product [ of this invention ] (a)/(b).

[0031] The interior material for cars obtained in the evaluation approach examples 1-3 and the example 1 of a comparison of allophone generating was attached in head lining of an automobile, and the generating situation of the allophone at the time of giving vibration was evaluated. The result was as follows.

Example 1: Especially generating of an allophone was not observed.

Example 2: Especially generating of an allophone was not observed.

Example 3: Especially generating of an allophone was not observed.

The example 1 of a comparison: It rubbed and a sound and a creak were observed.

[0032]

[Effect of the Invention] Using the configuration member for interiors of this invention which has an aeration stop layer as a flesh-side facing, by constituting the interior material for cars, since good absorption-of-sound nature is held and circulation of the indoor air to a rear face disappears from a surface, it can prevent that dirt adheres on epidermis material. Moreover, since the rear-face side which touches the car body consists of foaming resin, the allophone (creak) by friction is not produced, either.

## TECHNICAL FIELD

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[Field of the Invention] This invention relates to the interior material for cars which uses the configuration member for interiors which can be used as a member which constitutes the interior material for cars, and this configuration member for interiors as a flesh-side facing.

## PRIOR ART

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[Description of the Prior Art] The thing of various configurations is used as interior material for cars. Although the fanciness and the contact feel nature to a passenger are indispensable as a property for which the interior material for cars is asked, in addition to it, recently, low infiltration is needed. Although the phenomenon which indoor air penetrates interior material according to an atmospheric-pressure difference, and moves to the direction of the body may arise when infiltration is high, in that case, it is caught by the interior material front face, and particles, such as tar of the tobacco which floats during indoor air, serve as dirt, and adhere to interior material. Therefore, it is necessary to lose this airstream and an infiltration filter layer has come to be established in interior material as that cure. Generally plastic film is used for the infiltration filter layer.

[0003] The interior material for cars which consists of epidermis material (with a cushioning material) / a multilayer film / a base material is indicated by JP,7-117571,A. He is trying for this high-melting layer to commit a multilayer film as an infiltration filter layer including the low-melt point point resin layer which has a heat adhesive property, and the high-melting resin layer which exists between them. However, in this invention, although it is effective to the problem of contamination of head-lining epidermis material, since [ of epidermis material with a thin infiltration filter layer ] it is in a rear-face side immediately, the problem that the sound from an interior-of-a-room side will reflect in this infiltration filter layer, and will spoil the absorption-of-sound function as interior material has arisen. Moreover, the structure material which consists of epidermis material / a base material / a flesh-side facing

(hot melt + non-breathable film) is indicated by JP,5-65532,U. With this configuration, since a resin film layer exists in the maximum rear-face side where this structure material touches the body of a car, by vibration of a car etc., an allophone occurs by friction with a resin layer and the metallicity body, and displeasure is given to a passenger.

## EFFECT OF THE INVENTION

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## TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] This invention does not have the above problems, i.e., good absorption-of-sound nature is held, there is little generating of the dirt by indoor airstream, and it aims at offering the interior material for cars excellent in generating prevention of an allophone.

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[Problem(s) to be Solved by the Invention] This invention does not have the above problems, i.e., good absorption-of-sound nature is held, there is little generating of the dirt by indoor airstream, and it aims at offering the interior material for cars excellent in generating prevention of an allophone.

## EXAMPLE

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[Example] Hereafter, an example explains this invention to more concrete and a detail. Example With 1 gravure, it applied so that the resin coverage after drying a coating resin constituent on a heat-resistant film might serve as 5 g/m<sup>2</sup>. The coating resin constituent used the aquosity dispersing element containing the microcapsule with which the acrylic ester copolymer was connoted as base resin, and it connoted the isobutane in a vinylidene chloride / acrylonitrile-copolymer film as a foaming agent, the still more nearly little silicon mold defoaming agent as an additive, and a dryer using the biaxial-stretching PET film with a thickness of 12micro which carried out surface corona discharge treatment as a heat-resistant film. Gravure was set as 100 lines and the depth of 60micro, and was performed by line speed 100 m/min. The coated heat-resistant film was dried through the desiccation box set as 100 degrees C. In this way, the configuration member for car interiors of (a)/(b) type was produced. [0025] Next, using the fiberglass mat / hard urethane foam sheet / fiberglass mat



(6mm in sum total thickness) on which between layers was pasted up with urethane system liquid glue as a base material, the adhesion unification of this configuration member for car interiors obtained by epidermis material and the above up and down was carried out in piles, and the interior material for cars was produced. In addition, the configuration member for car interiors was piled up so that a heat-resistant film (a) might come to a base material side. Moreover, as epidermis material, the needle punch nonwoven fabric (product made from polyester) of eyes 180 g/m<sup>2</sup> was used. Three layers made to pile up mutually were set in the metal mold which set punch temperature as 120 degrees C, and set female mold temperature as 130 degrees C, and were pressurized for 60 seconds. In addition, if in charge of pressurization, the spacer with a higher 0.8mm than target base material thickness height of 6.8mm was used. It foamed in the resin (b) layer which blended the foaming agent with the heat of metal mold at the process of the adhesion unification by this heat press. Moreover, this adhesion of three layers is [0026] performed using the adhesives which oozed out from the fiberglass mat. Example With 2 rotary screen printing, it applied so that the resin coverage after drying a coating resin constituent on a heat-resistant film might serve as 13 g/m<sup>2</sup>. The coating resin constituent used the microcapsule with which urethane resin was connoted as base resin and it connoted the isobutane in acrylonitrile / methyl methacrylate copolymer film as a foaming agent, and the aquosity dispersing element containing the still more nearly little dryer as an additive, using a non-extended nylon 6 film with a thickness of 20micro as a heat-resistant film. Rotary screen printing used the version of 120 meshes, set it as the thickness of 100micro, and was performed by line speed 30 m/min. The coating layer was made to foam on the coated heat-resistant film at the same time it dried through the desiccation box set as 120 degrees C. In this way, the film which consists of (a)/(d) to which the resin (b) layer which blended the foaming agent foamed was produced. Next, at the nylon 6 film side on this film, the extrusion lamination of the ethylene-methacrylic-acid copolymer (the melting point of 98 degrees C, MFR8) was carried out at the thickness of 30micro using the T die set as the dice temperature of 200 degrees C. In this way, the configuration member for car interiors of (c)/(a) / (d) type was produced.

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